UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,601	08/30/2001	Simon Julian Powers	36-1477	7934

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NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER
NG, CHRISTINE Y

ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/914,601	POWERS ET AL.
	Examiner	Art Unit
	Christine Ng	2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 August 2001*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is

closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 9-17* is/are rejected.

7)☒ Claim(s) *7 and 8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

      application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

1.   Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 1, 5 and 9-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claims 1, 5, 9-12 and 15, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Referring to claims 1, 5 and 15, it is unclear what is meant by "...to

maximise, for each label in the sequence, the number of consecutive lower

priority labels between *that label* and the nearest label in the sequence of equal

or higher priority. It is also unclear what "*that label*" refers to.

Referring to claims 9 and 11, it is unclear what is meant by "…to

maximise, for each label in the sequence, the number of consecutive lower

priority labels between *it* and the nearest label in the sequence of equal or higher

priority. It is also unclear what "*it*" refers to.

Referring to claims 10 and 12, it is unclear what is meant by "…to

maximise, for each label in the sequence, the number of consecutive lower

priority labels between *said label* and the nearest label in the sequence of equal

or higher priority. It is also unclear what "*said label*" refers to.

Referring to claims 13 and 14, it is unclear how the packet message

priority setting is "on a scale of n to m" while the source sends "sequences of m -

n+1 packets messages".

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

5.   Claims 1, 10, 12 and 15 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 6,047,326 to Kilkki in view of U.S. Patent No.

6,597,682 to Kari.

Kilkki discloses in Figure 2 a packet message source comprising:

Means (user 20) arranged to include a respective packet message

payload in each packet message of a sequence of packet messages. Refer to

Column 7, lines 43-45.

Means (priority level computing unit 28) arranged to associate a priority

label with each successive packet message in said sequence in accordance with

a predetermined cyclic sequence of such labels; said priority labels each

representing one of a plurality of priority levels. Each cell is assigned a priority

label chosen from a predetermined cyclic sequence of eight priority levels

ranging from zero, which indicates the highest priority, and seven, which

indicates the lowest priority. Refer to Column 6, lines 49-54 and Column 8, lines

8-22.

Means (UNI 24) arranged to send such packet messages. Refer to

Column 8, lines 23-25.

Kilkki does not disclose that the positions of the labels in the cyclic

sequence being such as to maximise, for each label in the sequence, the number

of consecutive lower priority labels between that label and the nearest label in

the sequence of equal or higher priority.

Kari discloses in Figure 2A that a base station sends in the downlink

direction information about the priority of each uplink control sub-channel. In the

example in Figure 2A, every other time slot (8 of the 16 time slots) is assigned

the highest priority of P4. The remaining time slots are divided according to

priorities: with 4 time slots for priority P3, 2 time slots for priority P2, and 1 time

slot for priority P1. Each consecutive high priority P4 time slot is separated by

one lower priority time slot. Refer to Column 3, line 53 to Column 4, line 6.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to include that the positions of the labels in the

cyclic sequence being such as to maximise, for each label in the sequence, the

number of consecutive lower priority labels between that label and the nearest

label in the sequence of equal or higher priority; the motivation being so that the

high priority packets will be transmitted more frequently than the lower priority

packets.

6.   Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Patent No. 6,047,326 to Kilkki in view of Patent No. 6,597,682 to Kari, and

in further view of U.S. Patent No. 5,495,478 to Wilkinson et al.

   Kilkki does not disclose that said packet message source has an

associated dynamic state and said respective packet message payload

comprises a source state update message.

   Wilkinson et al disclose in Figure 2 that ATM packets can be used to

provide updates on the status of its contents by using a VCI state table 54.

"Linker 44 and unlinker 46 use VCI state table 54 to link formatted ATM cells into

packets and to access and update state information for a particular VCI used by

a packet and unlink formatted ATM cells." The VCI state table includes

information such as state, expected sequence number, etc. Refer to Column 4,

lines 27-54. Therefore, it would have been obvious to one of ordinary skill in the

art at the time the invention was made to include that said packet message

source has an associated dynamic state and said respective packet message

payload comprises a source state update message; the motivation being so that

each packet will have updated status information to facilitate data transmission to

the receiving end.

7.   Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 6,047,326 to Kilkki in view of U.S. Patent No.

6,597,682 to Kari, and in further view of U.S. Patent No. 5,289,468 to Yoshida.

        Kilkki does not disclose that the source further comprises means arranged

to associated a time-to-live label with each packet message.

        Yoshida discloses in Figure 3 a packet frame with a time-to-live TTL field

indicating that time in seconds during which a packet may be present in the

network. Refer to Column 3, lines 38-40. Therefore, it would have been obvious

to one of ordinary skill in the art at the time the invention was made to include

that the source further comprises means arranged to associated a time-to-live

label with each packet message; the motivation being so that the packet will be

discarded after a certain amount of time, thereby preventing packet overflow.

8.   Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 6,047,326 to Kilkki in view of U.S. Patent No.

6,597,682 to Kari in view of U.S. Patent No. 5,289,468 to Yoshida, and in further

view of U.S. Patent No. 6,338,994 to Murase.

        Kilkki does not disclose that the source comprises means arranged to

associate a packet message source identify with each packet message.

        Yoshida discloses in Figure 3 a packet frame with a source address field

303. Refer to Column 3, line 42. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the source comprises means arranged to associate a packet message source identify with each packet message; the motivation being so that the network can establish a path of transmission for the packet using its source and destination field.

Kilkki also does not disclose that the source comprises means arranged to associate a packet message payload type setting with each packet message.

Murase discloses that an ATM packet has in its header a payload type field which has a value of '111' if the packet cell is a dummy cell and a value other than '111' if it is a packet cell. Refer to Column 5, line 66 to Column 6, line 9. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the source comprises means arranged to associate a packet message payload type setting with each packet message; the motivation being so that the system will know when it is receiving a data cell for transmission to a destination node.

9.   Claims 5, 9, 11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,047,326 to Kilkki in view of U.S. Patent No. 6,597,682 to Kari, and in further view of U.S. Patent No. 6,320,845 to Davie.

Referring to claims 5, 9 and 11, refer to the rejection of claims 1, 10, 12 and 15. Furthermore, Kilkki discloses in Figure 2 that the packet messaging system comprises:

A communications link interface ($node_A$ 32).

Said communications link interface comprising:

An input port (input to node_A 32) for receiving packet messages from said

plurality of packet messages sources (UNI 24). Refer to Column 7, lines 43-45

and Column 8, lines 23-38.

Means arranged to read a priority label associated with each received

packet message. Node_A 32 accepts or discards the cell received from the UNI

24 based on the priority level of the cell and the buffering capacity of itself. Refer

to Column 8, lines 23-38.

A queue (buffer, not shown) for queuing received packet messages.

Node_A 32 accepts or discards the cell received from the UNI 24 based on the

priority level of the cell and the buffering capacity of itself. Refer to Column 8,

lines 23-38.

An output port (output of node_A 32) for sending each packet message at

the head of said queue onto a communications link (to another node_B 34 towards

destination 36). Refer to Column 8, lines 23-38.

Kilkki does not disclose that the queue queues packets messages in

descending order of their associated priority labels.

Davie disclose that per-flow queues are assigned to a calendar queue

depending on the prioritization scheme: the higher the priority associated with the

packet, the sooner it should be sent. Refer to Column 6, lines 37-47. Therefore,

it would have been obvious to one of ordinary skill in the art at the time the

invention was made to include that the queue queues packets messages in

descending order of their associated priority labels; the motivation being so that higher priority packets will be sent before lower priority packets.

Referring to claims 13 and 14, refer to the rejection of claim 5. The system further comprises that:

Successively dropping packet messages from each sequence on a priority basis leaves the remaining packet messages of the sequence as evenly spaced with respect to the original sequence as possible. Since each high priority packet P4 is separated by one lower priority packet (P1-P3), dropping the lower priority packets will leave the high priority packets P4 evenly spaced (by one time slot).

Means arranged to test the link for sufficient capacity to send the packet message at the head of the queue. Node$_A$ 32 accepts or discards the cell received from the UNI 24 based on the priority level of the cell and the buffering capacity of itself. Refer to Column 8, lines 23-38.

Means arranged to send the packet message at the head of the queue, when the link has sufficient capacity, out through at least one output port onto the link. Node$_A$ 32 accepts or discards the cell received from the UNI 24 based on the priority level of the cell and the buffering capacity of itself. Refer to Column 8, lines 23-38.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,047,326 to Kilkki in view of U.S. Patent No. 6,320,845 to Davie, and in further view of U.S. Patent No. 6,337,861 to Rosen.

Kilkki does not disclose that the source has means arranged to associate a time-to-live label with each packet message, and said communications link

interface further comprising: means arranged to read a packet message time-to-live label associated with each received packet message; means arranged to associate with each respective packet message an indication of the period of time that packet message has been queued; and means arranged to discard each packet message whose associated indication indicates that that packet message has been queued for a period of time longer than the associated packet message time-to-live label.

Rosen discloses that a packet contains a TTL field which is decremented each time the packet is transferred from one router to another. If the number in the TTL decrements to zero (representing the amount of time the packet has been in the network, or "buffered" in the network), the lifetime of the packet has been exceeded and the packet is discarded since the time that the packet has lingered in the network has been exceeded. Refer to Column 5, lines 27-36. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the source has means arranged to associate a time-to-live label with each packet message, and said communications link interface further comprising: means arranged to read a packet message time-to-live label associated with each received packet message; means arranged to associate with each respective packet message an indication of the period of time that packet message has been queued; and means arranged to discard each packet message whose associated indication indicates that that packet message has been queued for a period of time longer than the associated packet message time-to-live label. One would be motivated

to do so that the packet will be discarded after a certain amount of time, thereby

preventing packet overflow and preventing the packet from staying in the network

too long.

Allowable Subject Matter

11.   Claims 7 and 8 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

12.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Christine Ng whose telephone number is

(571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00

pm.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax

phone number for the organization where this application or proceeding is

assigned is 703-872-9306.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free).

C. Ng
July 25, 2005

RICKY NGO
PRIMARY EXAMINER